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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,484	11/08/2001	Robert E. Thompson	W00512/70058 PCL	8415

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EXAMINER

RIVELL, JOHN A

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 11/03/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,484

Applicant(s)

THOMPSON ET AL.

Examiner

John Rivell

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/28/03 (IDS), 8/21/03 (amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-15,19-25,29-38 and 42-49 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.

- 6) ☒ Claim(s) 1,2,6-15,19-25,29-38 and 42-49 is/are rejected.

- 7) ☐ Claim(s) _____ is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: _____

DETAILED ACTION

Claims 3-5, 16-18, 26-28 and 39-41 have been canceled. Thus claims 1, 2, 6-15, 19-25, 29-38 and 42-49 remain pending.

Applicant's arguments with respect to claims 1, 2, 6-15, 19-25, 29-38 and 42-49 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

The drawings are objected to as set forth on the Draftsperson's Review PTO-948. attached to paper no. 5. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, 8, 11, 12, 14, 15, 19, 21, 22, 23, 24, 29, 31, 34, 35, 37, 38, 42, 44, 45, 46, 47 and 48 are rejected under 35 U.S.C. §102 (b) as being anticipated by Shank, Jr. ('873).

Regarding claim 1, Shank, Jr. ('873) discloses "a media control valve, comprising: a valve body (generally shown as 76 in figure 2 but referred to as element 40) having a media inlet (61) and a media outlet (leading from sleeve 52 to 42 to 79); a plunger (valve stem 45) positioned within the valve body; a sleeve (52) positioned within

the valve body; a media opening (any one of orifices 56 when in communication with port 63, 61) in the sleeve (52), having a first portion proximate to the media outlet and a second portion distal to the media outlet, wherein the second portion is broader than the first portion; a housing (forming cylinder 41) connected to the valve body; a piston (46) positioned within the housing and connected to the plunger (45); and a base (read at the conduit portion at reference numeral 40) connected to the valve body in communication with the media outlet" as claimed.

Concerning the "media opening" and the smaller "first portion proximate to the media outlet" and the larger "second portion distal to the media outlet" any one of the openings 56, when communicating with port 63, 61, include such a feature as follows.

The bore of orifice 56 through sleeve 52 is not perpendicular to the longitudinal axis of sleeve 52. The sleeve 52 is hollow and cylindrical. As such the intersection of the non perpendicular bore 56 with the cylindrical inner surface of sleeve 52 forms an ellipse having a longer major axis, here this axis extends parallel to the axis of sleeve 52 and a shorter minor axis, here extending into and out of the plane of the figure. Looking at this "opening" from the "media outlet" located at, for example, along a linear axis including the media inlet and media outlet, the "opening" at 56 presents a "first portion proximal (closest) to the media outlet" and is near the extreme left end of the major axis of the ellipse. At this location of the ellipse the cross section of the opening is small. The "second portion" is read at the minor axis of the ellipse, is located "distal to the media outlet" and includes a larger cross sectional flow path than the first portion.

Regarding claim 6, in Shank, Jr. ('873) "the piston (46) comprises a containment isolation region" read on the surface of piston 46 facing chamber 48.

Regarding claims 8 and 31, in Shank, Jr. ('873), "at least one seal (219 and/or 230 is) positioned between the plunger (45) and the valve body adapted to resist the passage of one of media, fluid, contaminants, and combinations thereof between the valve body and housing" as claimed.

Regarding claims 11 and 34, in Shank, Jr. ('873) the "housing (forming cylinder 42) comprises an exhaust chamber (48) including a vent" to which is attached filter/muffler 71 (claims 12 and 35) as claimed.

Regarding claims 14 and 37, in Shank, Jr. ('873), the "valve body (40) and the housing (forming cylinder 42) comprise two distinct structures adapted to be joined together" by screws 53, 54 as claimed.

Regarding claims 15 and 38, in Shank, Jr. ('873) clearly "the valve body and housing (comprise) a mating structure" as claimed so as to be properly joined.

Regarding claims 19 and 42, in Shank, Jr. ('873) "a valve seat" is read on the interior surface of sleeve 52 mating with the exterior surface of valve stem 45 as shown in the closed position of figure 2.

Regarding claims 21 and 44, in Shank, Jr. ('873) the valve further includes "means providing a gentle seal" in that, as defined in applicants specification, there are no sharp edges of the valve stem 45 mating with the interior surface of sleeve 52 forming the valve sealing surfaces. When the valve of Shank, Jr. ('873) moves, the exterior surface of the stem 45 slides over the interior surface of the sleeve 52. As such

there are no sharp edges which, as disclosed for the prior art, lead to premature seal degradation.

Regarding claim 22, Shank, Jr. ('873) discloses "a valve (as shown in figure 2), comprising: a body (40) having a media inlet (61) and a media outlet (at numeral 42); a flow path within the body having a substantially linear axis and including the media inlet and the media outlet (see figure 2 and the "axis" from port 61, through section 63, port 56, sleeve 52 channel section at 42 and port 79); an opening (56) in the body having a first portion proximate to the outlet and a second portion distal to the outlet, wherein the second portion is broader than the first portion (as noted above in the explanation of the elliptical opening formed by the non perpendicular intersection of the orifice 56 with the hollow interior of sleeve 52); and a closing member (45) positioned within the body so as to selectively cover (and uncover) the opening" as claimed.

Regarding claim 23, Shank, Jr. ('873) discloses "a valve (as shown in figure 2), comprising: a body (40) having a media inlet (61) and a media outlet (at numeral 40); a flow path within the body having a substantially linear axis and including the media inlet and the media outlet (see figure 2 and the "axis" from port 61, through section 63, port 56, sleeve 52 channel section at 42 and port 79); a closing member (45) positioned within the body; a housing (forming cylinder 42); and a piston (46) within the housing, connected to the closing member and having a containment isolation region (read on the portion of piston 46 facing chamber 48)" as claimed.

Regarding claim 24, Shank, Jr. ('873) discloses "a media control valve, comprising: a valve body (40) having a media inlet and a media outlet; a plunger (45)

positioned within the valve body; a flow path within the body having a substantially linear axis and including the media inlet and the media outlet (see figure 2 and the "axis" from port 61, through section 63, port 56, sleeve 52 channel section at 42 and port 79); a sleeve (52) positioned within the valve body; a media opening (56) in the sleeve; a housing (forming cylinder 42) connected to the valve body (40); a piston (46) positioned within the housing and connected to the plunger; and a base (read at the conduit portion at reference numeral 40) connected to the valve body in communication with the media outlet" as claimed.

Regarding claim 29, in Shank, Jr. ('873), "the media opening (56 has) a first portion proximate to the media outlet and a second portion distal to the media outlet, wherein the second portion is broader than the first portion" as noted above in the explanation concerning the elliptical opening formed by the intersection of the non perpendicular bore 56 with the interior surface of sleeve 52.

Regarding claim 45, Shank, Jr. ('873) discloses "a media control system comprising: a media vessel (24, fig. 1); an air flow path (at 43 in fig. 2); a media flow path having a substantially linear axis and including a media inlet (61) connected to the media vessel and a media outlet (at reference numeral 42) connected to the air flow path (43, via port 79); and a media flow control valve (40) wherein the media control valve (40) further comprises a gentle seal" in that, as defined in applicants specification, there are no sharp edges of the valve stem 45 mating with the interior surface of sleeve 52 forming the valve sealing surfaces. When the valve of Shank, Jr. ('873) moves, the exterior surface of the stem 45 slides over the interior surface of the sleeve 52. As such

there are no sharp edges which, as disclosed for the prior art, lead to premature seal degradation as claimed.

Regarding claim 46, in Shank, Jr. ('873) "the media flow path axis (along the flow path from 61 to 63, 56, 42, 79) is substantially perpendicular with respect to a surface upon which the media control system rests" identified by the horizontal air flow path 43 as claimed.

Regarding claim 47, in Shank, Jr. ('873) "the media flow path axis (along the flow path from 61 to 63, 56, 42, 79) is substantially perpendicular to an axis of the airflow path" 43 as claimed.

Regarding claim 48, Shank, Jr. ('873) discloses "a media control valve comprising: a valve body (40) comprising a media inlet (61) and a media outlet (at reference numeral 42); a media flow path having a substantially linear axis and including the media inlet and the media outlet (see figure 2 and the "axis" from port 61, through section 63, port 56, sleeve 52 channel section at 42 and port 79); a gentle seal (in that, as defined in applicants specification, there are no sharp edges of the valve stem 45 mating with the interior surface of sleeve 52 forming the valve sealing surfaces. When the valve of Shank, Jr. ('873) moves, the exterior surface of the stem 45 slides over the interior surface of the sleeve 52. As such there are no sharp edges which, as disclosed for the prior art, lead to premature seal degradation) positioned within the valve body; a plunger (45) positioned within the valve body; a piston (46) positioned within the valve body and connected to the plunger; a sleeve (52) positioned within the valve body; a media opening (56) in the sleeve; a housing (forming cylinder 42)

connected to the valve body (40); and a base (read at the conduit portion at reference numeral 40) connected to the valve body in communication with the media outlet" as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 9, 10, 13, 25, 32, 33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shank, Jr. ('873).

Regarding claims 2 and 25, Shank, Jr. ('873) discloses the claimed invention except for "the base... including... an attachment mechanism adapted to attach the base to the valve body".

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the "base" element and the valve body of Shank, Jr. ('873) from separate elements and then to attach them together, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179. Thus it would have been obvious to, for example, form the conduit section at reference numeral 40 from plural pieces.

Regarding claims 9, 10, 32 and 33 Shank, Jr. ('873) discloses the claimed invention except for "three seals... constructed as a unitary piece".

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the "seal element" 219 and/or 230 of Shank, Jr. ('873) from plural separate seal elements and then to construct them unitarily, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Regarding claims 13 and 36, Shank, Jr. ('873) discloses the claimed invention except for "filter" 71 of Shank, Jr. ('873) "adapted to filter particles greater than about 20 microns in diameter.

The recitation of "greater than about 20 microns in diameter" is clearly an obvious design expedient over the filter/muffler hole size as disclosed in Shank, Jr. ('873) which provide no new and/or unexpected results nor solves any stated problem with respect to the "filter" 71 of Shank, Jr. ('873).

Claims 7 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shank, Jr. ('873) in view of Bey.

The patent to Shank, Jr. ('873) discloses all the claimed features with the exception of having a convex, in the direction of the valve body, contaminant isolation area on the side of piston 46 facing away from the media flow path.

The patent to Bey discloses that it is known in the art to employ a piston element 118 which includes a contaminant isolation region above the piston 118 which will contain and isolate leakage, from below, by the piston by collecting such leakage in the convex cutout region therein for the purpose of isolating leakage in the convex portion of the piston.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Shank, Jr. ('873) a convex cutout portion in the piston 46 thereof for the purpose of isolating and containing contaminant leaked across the piston as recognized by Bey.

Claims 20, 43, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shank, Jr. ('873) in view of Desjardins.

The patent to Shank, Jr. ('873) discloses all the claimed features with the exception of having an elastomeric valve seating surface.

The patent to Desjardins discloses that it is known in the art to employ an elastomeric valve seat 72 for the purpose of mating with the valve stem 74 to control flow through a media control valve device further precluding premature seal degradation and to survive in the harsh environment of media flow control.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Shank, Jr. ('873) an elastomeric valve seat for the purpose of further precluding premature seal degradation and to survive in the harsh environment of media flow control as taught by Desjardins.

Response to Arguments

Regarding applicants remarks as they may concern the above, the argument that the movement of the valve stem 45 of Shank, Jr. ('873) is not intended to produce metering of flow is noted. However, this statement by the patentee is not entirely accurate. For example, during a certain definite time period it takes the stem 45 to traverse the opening 56 in either opening or closing movement, as the leading or trailing edge of the stem traverses the cross section of the opening of orifice 56, there are

certain moments in which the flow of fluid and/or media through the orifice is “metered”. Moreover, flow metering is accomplished by repositioning sleeve 52 to place an orifice 56 of different size in the flow path. Additionally, this argument is moot in that there is no claim language specific to a metering function in the currently claimed device. As set forth above, all of the claimed features are compared to their equivalents in the reference to Shank, Jr. ('873).

Regarding the arguments concerning claim 22, Shank, Jr. ('873) discloses the now claimed valve device having a media flow path having a substantially linear axis as claimed.

Regarding the arguments concerning claim 23, Shank, Jr. ('873) discloses the now claimed valve device having a media flow path having a substantially linear axis as claimed.

Regarding the arguments concerning claims 24, 25, 29-38 and 42-44, Shank, Jr. ('873) discloses the now claimed valve device having a media flow path having a substantially linear axis as claimed.

Regarding the arguments concerning claims 45-47, Shank, Jr. ('873) discloses the now claimed valve device having a media flow path having a substantially linear axis and a gentle seal as claimed.

Regarding the arguments concerning claims 48-49, Shank, Jr. ('873) discloses the now claimed valve device having a media flow path having a substantially linear axis and a gentle seal as claimed.

Conclusion

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (703) 308-2599. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.


John Rivell

Primary Examiner
Art Unit 3753

j.r.